

Appl. No. 10/800,888
Atty. Docket No. 2004B015
RCE dated May 22, 2007

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of the Claims:

1. (Currently Amended) A process for reducing the addition hydrogenation activity of a catalyst comprising a crystalline molecular sieve and at least one hydrogenation metal selected from the group consisting of a Group VIIB metal, a Group VIII metal, and mixtures thereof, said process comprising:

treating the catalyst with a catalyst treatment feed consisting essentially of hydrogen under sufficient conditions of temperature and pressure and for a time of at least 4 hours to reduce the addition hydrogenation activity of the treated catalyst in an amount of at least 10 percent in comparison to the untreated catalyst.
2. (Original) The process recited in Claim 1, wherein said molecular sieve has an intermediate pore size.
3. (Original) The process recited in Claim 2, wherein said molecular sieve has a structure selected from the group consisting of MFI, MEL, MTW, EUO, MTT, HEU, FER, MFS, and TON.
4. (Original) The process recited in Claim 1, wherein said molecular sieve is selected from the group consisting of ZSM-5, ZSM-12, ZSM-22, ZSM-23, ZSM-34, ZSM-35, ZSM-38, ZSM-48, ZSM-50, and ZSM-57.
5. (Original) The process recited in Claim 4, wherein the addition hydrogenation activity of the treated catalyst is reduced at least 40 percent in comparison to the untreated catalyst.
6. (Original) The process recited in Claim 4, wherein the hydrogenolysis activity of the treated catalyst is reduced at least 50 percent in comparison to the untreated catalyst.
7. (Original) The process recited in Claim 2, wherein the conditions include a pressure of at least 700 kPa, a temperature of at least 316°C, and a time of at least 4 hours.

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8. (Original) The process recited in Claim 2, wherein the conditions include a pressure of at least 1034 kPa, a temperature of at least 371°C, and a time of at least 8 hours.
9. (Original) The process recited in Claim 2, wherein the conditions include a pressure of at least 1400 kPa, a temperature of at least 427°C, and a time of at least 10 hours.
10. (Original) The process recited in Claim 7, wherein said hydrogenation metal is present in said catalyst in an amount of from about 0.03 to about 3 percent by weight based on the total weight of said catalyst.
11. (Original) The process recited in Claim 10, wherein said hydrogenation metal is selected from the group consisting of platinum, rhenium, and mixtures thereof.
12. (Original) The process recited in Claim 11, wherein said hydrogenation metal is incorporated with said molecular sieve by ion exchange.
13. (Original) The process recited in Claim 7, wherein said crystalline molecular sieve is MFI.
14. (Original) The process recited in Claim 13, wherein said catalyst further comprises a binder.
15. (Original) The process recited in Claim 14, wherein said binder is silica or alumina.
16. (Original) The process recited in Claim 13, wherein the hydrogenolysis activity of the treated catalyst is reduced at least 75 percent in comparison to the untreated catalyst.
17. (Original) The process recited in Claim 16, wherein said crystalline molecular sieve is ZSM-5.
18. (Original) The process recited in Claim 13, wherein said catalyst further comprises a selectivating agent to enhance the para-selectivity of said catalyst.
19. (Original) The process recited in Claim 18, wherein said selectivating agent is selected from the group consisting of phosphorus, an alkaline earth metal oxide, boron oxide, titania, antimony oxide, silica, manganese oxide, and coke.

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20. (Original) The process recited in Claim 17, wherein said hydrogenation metal is rhenium.
21. (Original) The process recited in Claim 17, wherein the treated catalyst is substantially free of hydrogenolysis activity.
22. (Original) The process recited in Claim 11, wherein said crystalline molecular sieve is ZSM-12.
23. (Currently Amended) A process for treating a catalyst comprising ZSM-5 and least one hydrogenation metal selected from the group consisting of platinum, rhenium, and mixtures thereof to reduce the hydrogenolysis activity of the catalyst, said process comprising:
- treating the catalyst with a catalyst treatment feed consisting essentially of hydrogen at a pressure of at least 700 kPa, a temperature of at least 316°C, and a time of at least 4 hours to reduce the hydrogenolysis activity of the treated catalyst in an amount at least 25 percent in comparison to the untreated catalyst.
24. (Original) The process recited in Claim 23, wherein the hydrogenolysis activity of the treated catalyst is reduced at least 75 percent in comparison to the untreated catalyst.
25. (Original) The process recited in Claim 23, wherein said hydrogenation metal is rhenium.
26. (Original) The process recited in Claim 24, wherein said catalyst further comprises binder selected from the group consisting of silica and alumina.
- 27-49. (Canceled)
50. (New) A process for reducing the addition hydrogenation activity of a catalyst comprising ZSM-12 and at least one hydrogenation metal selected from the group consisting of platinum, rhenium, and mixtures thereof, said process comprising:
- treating the catalyst with a catalyst treatment feed consisting essentially of hydrogen at a pressure of at least 700 kPa, a temperature of at least 316°C, and a time of at least

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4 hours to reduce the hydrogenolysis activity of the treated catalyst in an amount at least 25 percent in comparison to the untreated catalyst.